

# PATENT ABSTRACTS OF JAPAN

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## (54) **WATER BARRIER SHEET FOR LANDFILLING TREATMENT WITH WASTE, AND LANDFILLING TREATMENT WITH WASTE USING THE SAME**

(57)Abstract:

PURPOSE: To prevent the generation of an environmental problem after landfilling treatment by forming a water barrier sheet for the landfilling treatment with waste from a waterproof air permeable sheet having a porous film provided to at least one part thereof.

CONSTITUTION: A waterproof air permeable water barrier sheet is formed by superposing a porous film 1 having air permeable reinforcing sheets 2, 3 laminated and bonded to both surfaces thereof on a water barrier sheet 4 having a plurality of notch parts so as to surround each of the notch parts of the sheet 4 and bonding the peripheral edge part of the porous film to the water barrier sheet 4. When the porous film 1 is incorporated in the water barrier sheet 4, it is not necessarily to provide the notch part of the surface of water barrier sheet and the water barrier sheets 4 are bonded to both surfaces of the porous film 1 and the intermediate parts of the sheets are composed of the porous sheet 1 or a large number of through-holes are provided to the water barrier sheets 4 at predetermined places and the porous films 1 are superposed on the through-hole parts to be bonded thereto.



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**CLAIMS**

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[Claim(s)]

[Claim 1] The waterproof sheet for reclamation processing of the waste which consists of a waterproofing permeability sheet which has a porosity film in part at least.

[Claim 2] The waterproof sheet of a claim 1 with which this porosity film makes the field of one [ at least ] of these carry out partial adhesion of the permeability reinforcement sheet.

[Claim 3] The claim 1 or 2 waterproof sheets this porosity film of whose is an extension porosity film of a polytetrafluoroethylene.

[Claim 4] One waterproof sheet of the claims 1-3 these porosity films of whose are what has a hydrophilic resin layer in the field of one [ at least ] of these.

[Claim 5] The reclamation art of the waste characterized by raising the level with fill after facing [ raising the level with fill and ] and laying one waterproof sheet of the aforementioned claims 1-4 on waste, whenever it carries out specified quantity abandonment of the waste.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the reclamation art of waste which used the waterproof sheet for reclamation processing of waste, and it.

[0002]

[Description of the Prior Art] As a reclamation art of waste, the sandwich method which raises the level with fill by soil covering of 50cm layer for about 3m of every waste layer thickness is adopted. However, by such conventional method, in order to raise the level with fill in a waste layer by direct soil covering, the storm sewage by the rainfall permeates a waste layer, the generation of gas by the anaerobic resolution is urged, and an injurious ingredient will begin to melt into storm sewage from waste. Consequently, in a sanitary landfill and after reclamation, environmental problems, such as ignition and generating and soil of a bad smell, groundwater contamination, and water pollution, are produced, and the problem that former site use of a waste \*\*\*\* disposal plant cannot be performed over several years - dozens of minutes even if reclamation is completed is.

[0003]

[Problem(s) to be Solved by the Invention] this invention solves the aforementioned problem looked at by the conventional technology, and makes it the technical problem to offer the waterproof sheet used for the reclamation art of waste and it which do not have generating of an environmental problem after reclamation processing.

[0004]

[Means for Solving the Problem] This invention persons came to complete this invention, as a result of repeating research wholeheartedly that the aforementioned technical problem should be solved. That is, according to this invention, the waterproof sheet for reclamation processing of the waste which consists of a waterproofing permeability sheet which has a porosity film in part at least is offered. Moreover, according to this invention, the reclamation art of the waste characterized by raising the level with fill after facing [ raising the level with fill and ] and laying the aforementioned waterproof sheet on waste, whenever it carries out specified quantity abandonment of the waste is offered.

[0005] As a waterproof sheet used for the waste treatment of this invention, the waterproofing permeability sheet which has a porosity film in part at least is used. As a porosity film, although a porosity high polymer film with conventionally well-known a polyolefine system, a polyurethane system, a polyester system, a polyether system, a polyvinyl chloride system, a cellulose system, etc. can be used arbitrarily, it is good to use an extension porosity polytetrafluoroethylene (JP,56-45773,B, JP,56-17216,B) preferably. Preferably, the average pore diameter in this porosity film is 1 micrometer or less, and should just have 5 micrometers or less of waterproofness and permeability. 10-100 micrometers of thickness of a porosity film are usually 30-80 micrometers preferably. In this invention, this porosity film carries out laminating adhesion of the permeability reinforcement sheet, and is preferably used for the one side or both sides. In this case, if permeability is good and is a sheet with high intensity as a permeability reinforcement sheet, anythings will be usable and a nonwoven fabric, textile fabrics, a

network, a waterproof paper, etc. will be used. When making a porosity film carry out laminating adhesion of the reinforcement sheet, it is desirable to perform the adhesion by the partial pasting-up method. If it carries out by the complete pasting-up method, permeability and moisture permeability will be spoiled and smooth transparency of the gas which occurs out of waste, and a steam will no longer be attained. this partial pasting-up method -- punctiform adhesion and a line -- there are adhesion, pattern-like adhesion, etc. and it is preferably good 10 - 80% of that it is comparatively alike, and adhesives application area applies adhesives to laminating area so that it may become 5 to 95% [0006] It is desirable to prepare a hydrophilic macromolecule layer in the field of one [ at least ] of these to the porosity film used by this invention. Although a conventionally well-known thing can be used as a hydrophilic macromolecule, use of a polyether urethane resin, perfluoro-sulfonic acid type resin, etc. is desirable especially. When carrying out the laminating of the reinforcement sheet to a porosity film, it is desirable to carry out the laminating of the reinforcement sheet on this hydrophilic macromolecule layer. This hydrophilic macromolecule layer prevents degradation of the porosity film by contact to an oil content. 1-50 micrometers of thickness of this hydrophilic macromolecule layer are 5-20 micrometers preferably.

[0007] The waterproof sheet of this invention consists of a waterproofing permeability sheet which has said porosity film in part at least. Although it can also constitute from a porosity film which described it the whole above, since cost becomes high in this case, as for this waterproofing permeability sheet, it is advantageous to incorporate and use a porosity film for some waterproof sheets generally used conventionally. The position and area of a porosity film which are included in a waterproof sheet are suitably decided according to the area of a waste layer, and the amount of the gas emitted from a waste layer, or a steam. Although anythings are usable as a waterproof sheet if transparency of water can be prevented, use of an elasticity chlorination vinyl sheet, a synthetic rubber sheet, and a synthetic-resin film, for example, a polyolefin resin sheet, etc. is suitable. Although there are a method using adhesives as the adhesion method in the case of incorporating a porosity film to a waterproof sheet, the method of carrying out heat weld, etc., use of the heat weld method from the point of the endurance of an adhesion side is advantageous. What is necessary is to face [ raising the level with fill and ], whenever it carries out specified quantity abandonment of the waste, in order to reclaim land from and process waste using the waterproof sheet of this invention, to lay the waterproof sheet of this invention on waste, and just to raise the level with fill on the laid waterproof sheet.

[0008] Next, drawing 1 which explains this invention with reference to a drawing shows the important section perspective diagram about one example of the waterproofing permeability water-shut-off sheet of this invention. This waterproofing permeability water-shut-off sheet is piled up so that the notch of the waterproof sheet 4 which has two or more notches for the porosity film 1 which carried out laminating adhesion of the permeability reinforcement sheets 2 and 3 to both sides may be surrounded, and it is the waterproof sheet 4 and the thing of the pasted-up structure in the periphery section of a porosity film. When building the porosity film 1 into the waterproof sheet 1, it is not necessary to necessarily prepare a notch in the front face, a waterproof sheet can be pasted up on the both-sides side of a porosity sheet, and the thing of the structure where pars intermedia consists of a porosity film, the method of drilling many bores in the predetermined part of a waterproof sheet, putting a porosity film on the bore section, and pasting up, etc. can be adopted. Drawing 2 is a state diagram at the time of reclaiming land from and processing waste using the waterproofing permeability water-shut-off sheet of this invention. In addition, each sign shown in drawing 2 has the same meaning as what was shown in drawing 1 .

[0009]

[Effect of the Invention] By reclaiming land from and processing waste using the waterproof sheet of the waterproofing permeability of this invention, storm sewage can prevent permeating into waste completely. Therefore, according to this invention, the problem of promotion of the anaerobic resolution of the waste produced when storm sewage mixes in waste, and the problem to which the injurious ingredient from waste is eluted in storm sewage are effectively solvable. Moreover, gas and the steam which are emitted from waste can be made to emit at an early stage using the permeability of this

invention water-shut-off sheet.

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DERWENT-ACC-NO: 1994-097153

DERWENT-WEEK: 200132

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TITLE: Water insulating sheet used for  
landfill of waste - consisting of porous film of PTFE  
laminated with reinforcing sheet with air  
permeability and hydrophilic  
resin layer on at least one surface

PATENT-ASSIGNEE: JAPAN GORE TEX INC[NIGO]

PRIORITY-DATA: 1991JP-0216362 (August 1, 1991)

PATENT-FAMILY:

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LANGUAGE		MAIN-IPC	
JP 06047363 A		February 22, 1994	N/A
003	B09B 001/00		
JP 3171461 B2		May 28, 2001	N/A
003	B09B 001/00		

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE		
JP 06047363A	N/A	
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ABSTRACTED-PUB-NO: JP 06047363A

BASIC-ABSTRACT:

A water insulating and air permeable sheet is claimed of

which at least one portion is made of porous film (A). At least one surface of (A) is laminated with a reinforcing sheet with air permeability. (A) is a elongated porous film made of polytetrafluoroethylene, and has a hydrophilic resin layer at least on one surface. A method of landfill of waste comprises covering waste with the sheet after every spreading and rolling compaction process of waste, which is further covered with soil.

USE/ADVANTAGE - Used for landfill of waste. Usually waste is covered with 50cm thickness soil after every spreading with 3m of spreading depth, but pptn. permeates into the waste, where the anaerobic decomposition takes place, that results in the generation gases (smells) and the contamination of soil and underground water. This method is able to insulate disposed waste from pptn. and prevent its anaerobic decomposition, besides water vapour and gases can diffuse into air.

TITLE-TERMS: WATER INSULATE SHEET LANDFILL WASTE CONSIST  
POROUS FILM PTFE  
LAMINATE REINFORCED SHEET AIR PERMEABLE  
HYDROPHILIC RESIN LAYER ONE  
SURFACE

DERWENT-CLASS: A93 J04 P43 P73

CPI-CODES: A04-E08; A09-A09; A12-R; A12-S08A; J10-A;

POLYMER-MULTIPUNCH-CODES-AND-KEY-SERIALS:

Key Serials: 0011 0207 0210 0231 0947 0968 2211 2220 2513  
2522 2653 2680 2708

2726 2736 3250 3251 3256

Multipunch Codes: 017 04- 062 064 087 090 308 435 443 477  
502 53& 532 533 535

540 575 58& 595 61- 623 626 654 688 723 724 017 04- 443 477

502 52& 53& 532 533

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